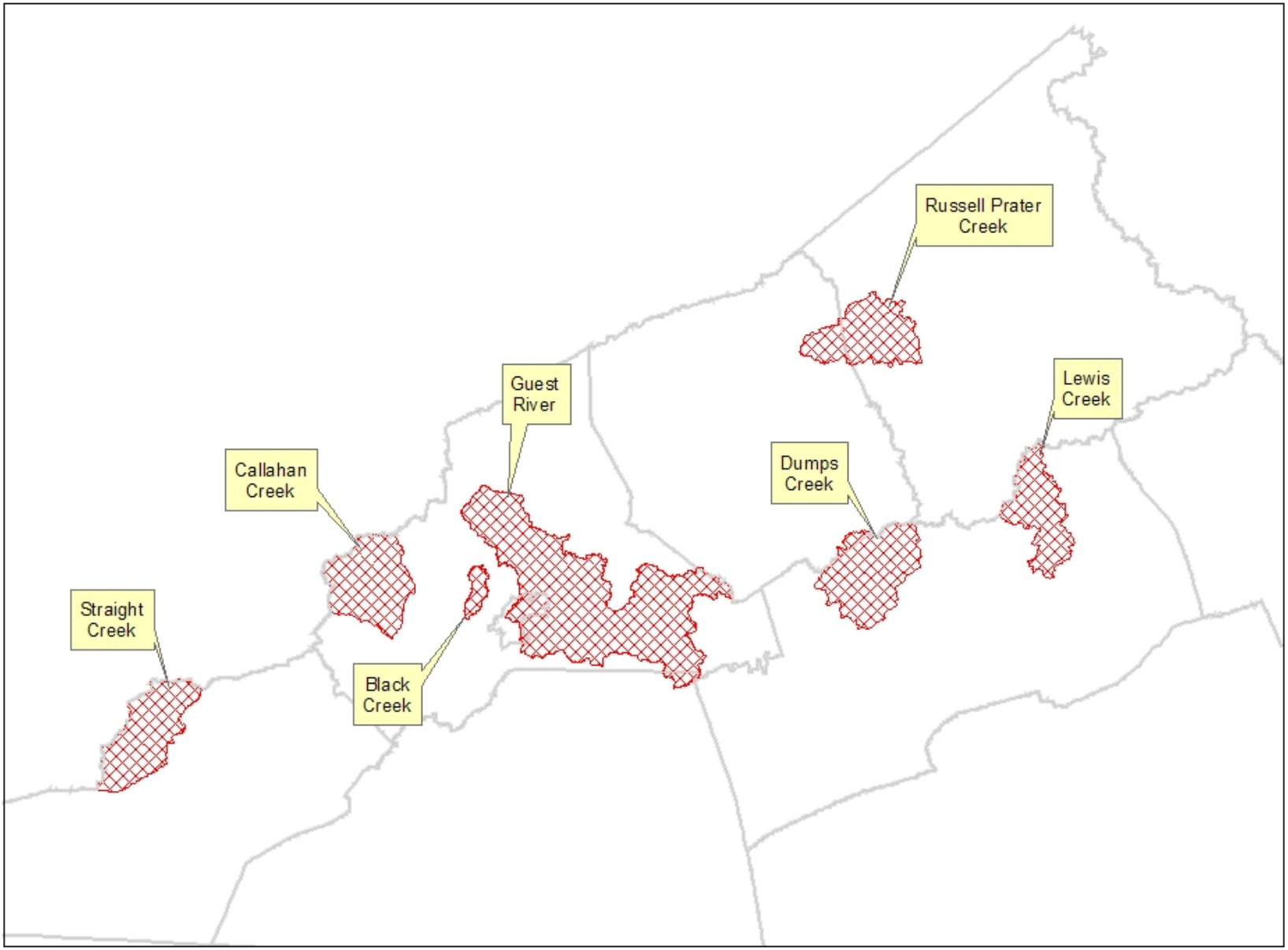
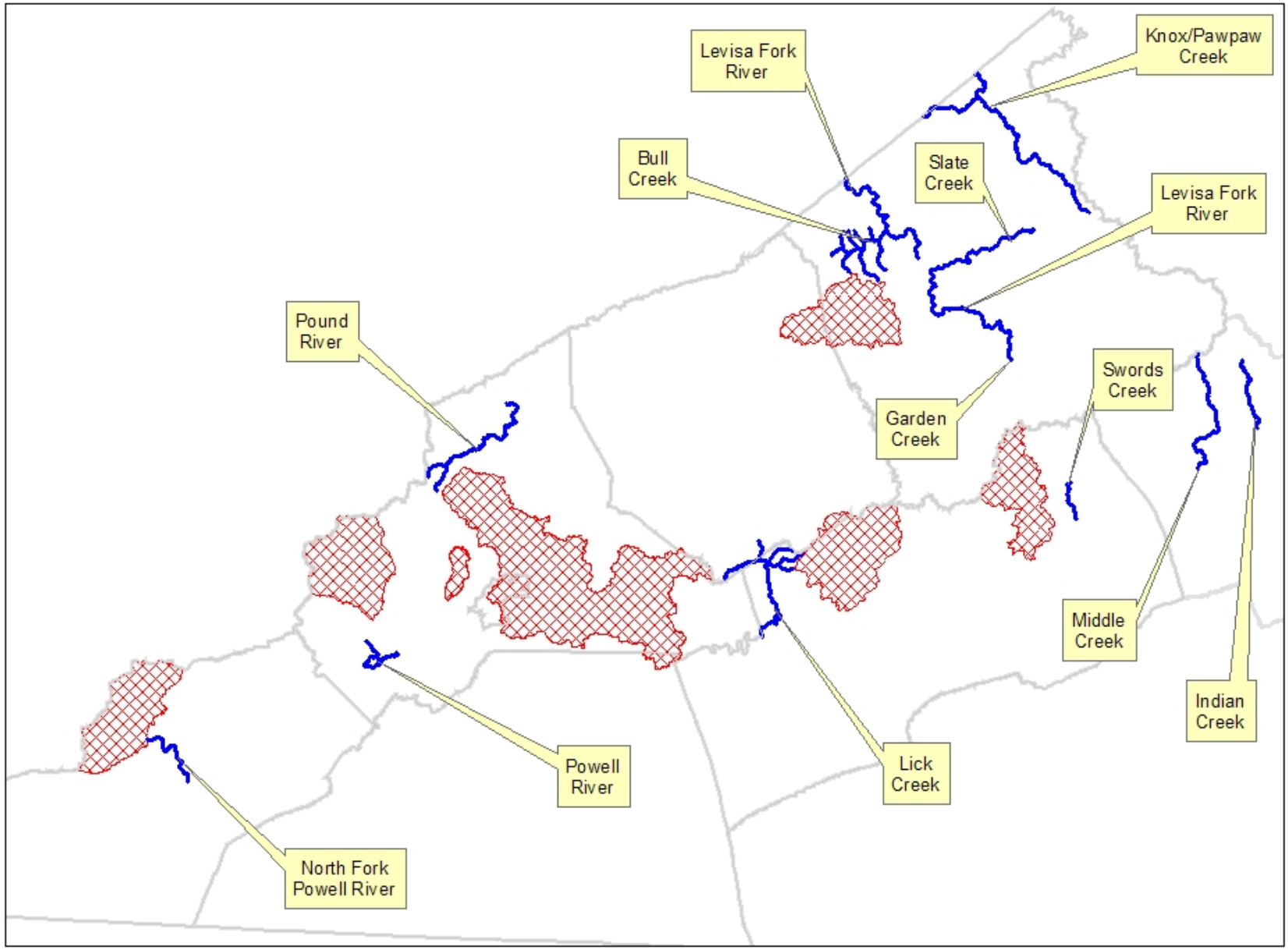
# TMDL Permitting Processes

Virginia Division of Mined Land Reclamation

# TMDL Watersheds in Coalfields



# Impaired Streams in Coalfields



# Introduction

- Additional stream segments impaired by “resource extraction” have been identified within the coalfields.
- Approximately 75 percent of permits processed by DMME may be affected by TMDL requirements.
- DMME will calculate waste load on a quarterly basis for reported loads
- DMME will recalculate TMDL loads for each submitted application within a TMDL watershed

# Introduction

- TMDL review procedure implemented December 1, 2005
- Procedure available on DMLR Website
  - http://www.mme.state.va.us/Dmlr/default.htm
  - DMLR Guidance Memo Form 14-05 under operator memos.

# Introduction

- Review procedure consists of four general steps
  - TMDL screening
  - EPA notification
  - CHIA modification
  - Waste load evaluation

# Review Process Step 1 (Screening)

- Drafting review
- TMDL report conformity
- TMDL waste load compliance

# Review Process Step 2 (EPA notification)

- TMDL reviewer will determine EPA notification
- DMLR will submit summary information to EPA
- Applicant may be required to submit sections of the application for EPA
- EPA has 30 day comment period

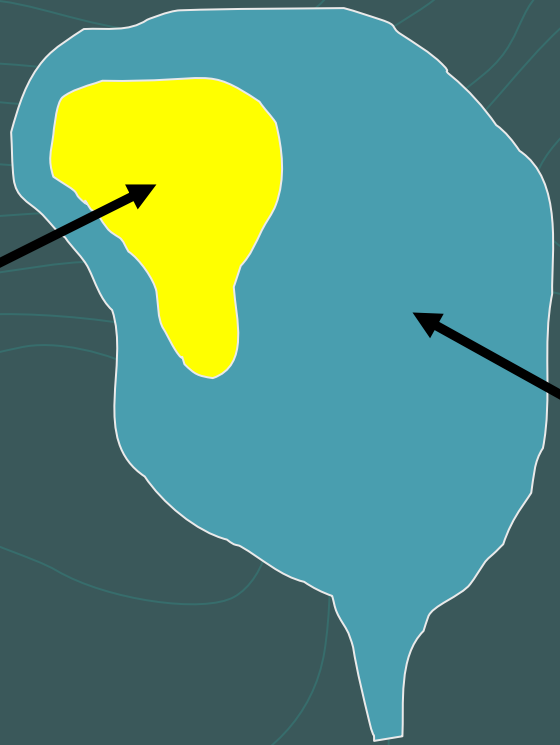
# Review Process Step 3 (CHIA modification)

- CHIA will need modification to include
  - Waste load allocation tables
  - Document the available load
  - Document BMPs or other provisions
- DMLR still in process of developing CHIA modifications

# Review Process Step 4 (Waste load evaluation)

- Waste load accounting
- Remining calculations
- AML load reduction credits

# Remining Watersheds

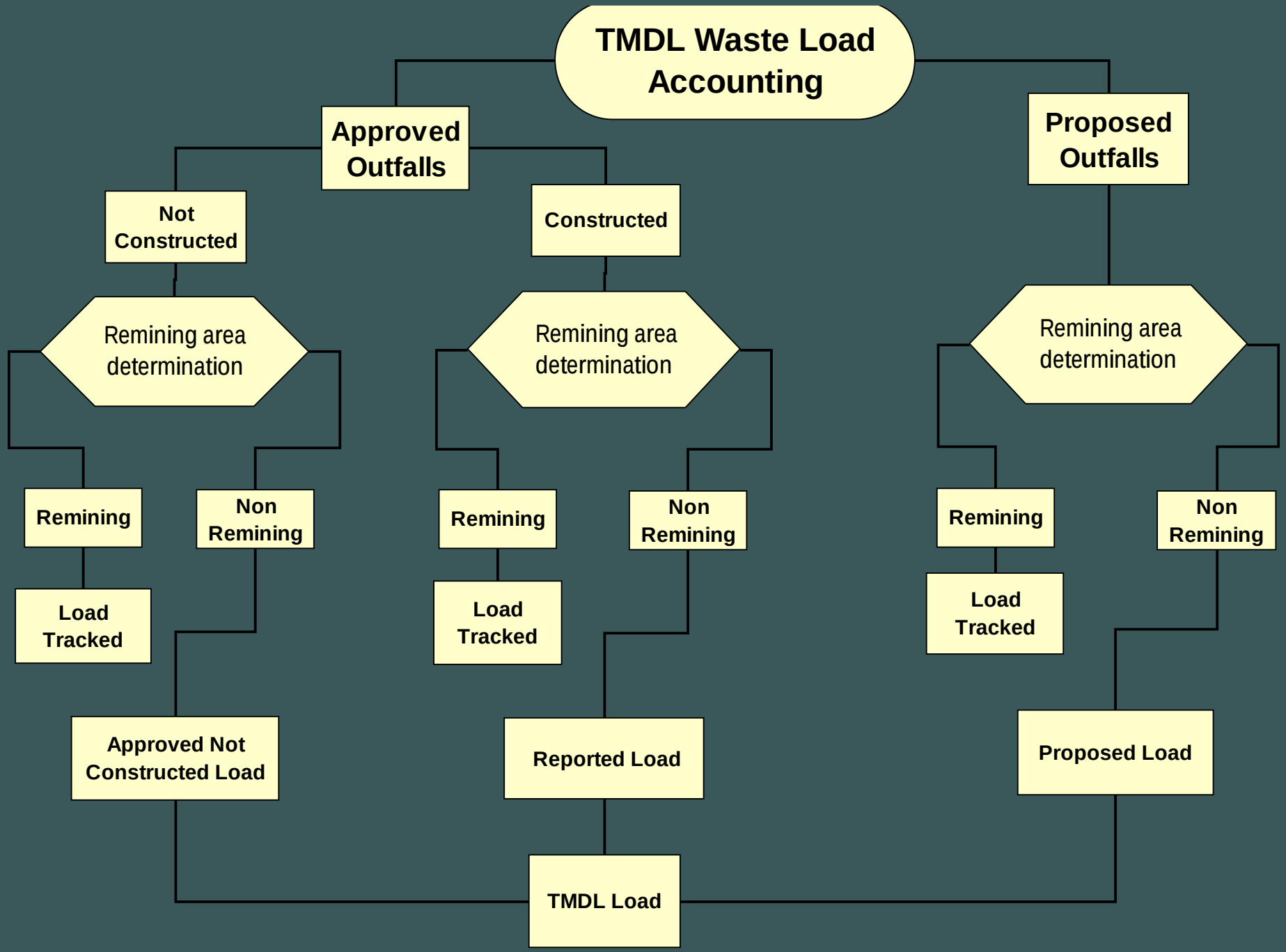


**Remining Area**

**Newly Disturbed Area**

# Waste load calculations

- Developed calculations for Mn, Fe,  and TSS
- DMLR will develop calculations for additional parameters as necessary
- Calculations based on three classes of NPDES outfalls
  - Constructed
  - Not constructed
  - Proposed


TMDL Waste Load Accounting
Approved Outfalls
Proposed Outfalls
Not Constructed
Constructed
Remining area determination
Remining area determination
Remining area determination
Remining
Non Remining
Remining
Non Remining
Remining
Non Remining
Load Tracked
Load Tracked
Load Tracked
Approved Not Constructed Load
Reported Load
Proposed Load
TMDL Load

# Waste load calculations

- Constructed Outfalls
  - Date weighting
  - Reported flow
  - Measured concentration
  - Precipitation exemptions

# Waste load calculations

- Not Constructed Outfalls
  - Averaged flow
  - Assumed concentration

# Waste load calculations

- Proposed Outfalls
  - Averaged flow
  - Assumed concentration

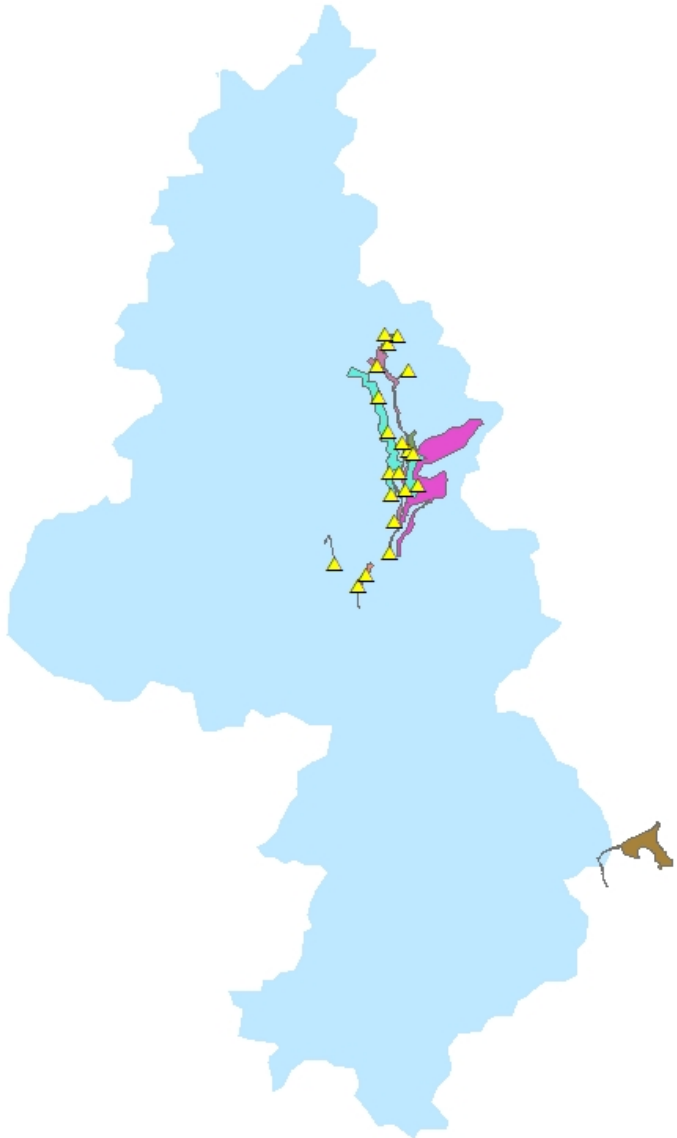
# Summary Table

| 2004 and 1st through 3rd Quarter 2005 TMDL Waste Load | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Watershed Name | Outfall Status (Jan. 4, 2006) | | | | Stressor | Outfall Discharge per Watershed Acre (gpm/acre) | Reported Load (kg/yr) | | Approved Not Constructed Waste Load (kg/yr) | Available Waste Load 2004 Data (kg/yr) | Available Waste Load 1st through 3rd Qtr. 2005 (kg/yr) | Proposed Additional Waste Load (kg/yr) | Adopted Waste Load Allocation |
| | Active | Deleted | Not Constructed | Proposed | | | 2004 | 1st through 3rd Qtr. 2005 | | | | | |
| Guest River | 81 | 15 | 10 | 5 | TSS | 0.9 | 38693.3 | 48212.1 | 18397.4 | 58,695.30 | 49,176.50 | 4655.7 | 115,786.00 |

Individual Application Summary

| Permit No. | Application No. | Revision No. | Proposed Outfalls | Drainage Area (acres) | Remining Area (acres) | Load Contributing Area (acres) | Proposed Additional Load for this Application (kg/yr) |
|---|---|---|---|---|---|---|---|
| New | 1003066 | 1 | 001 | 9.24 | 0 | 9.24 | 579.0 |
| | 1003066 | 1 | 002 | 2.64 | 0 | 2.64 | 165.4 |
| | 1003066 | 1 | 003 | 2.40 | 0 | 2.40 | 150.4 |
| | 1003066 | 1 | 004 | 5.82 | 0 | 5.82 | 364.7 |
| | | | | | | TOTAL | 1259.5 |

# Lewis Creek Watershed



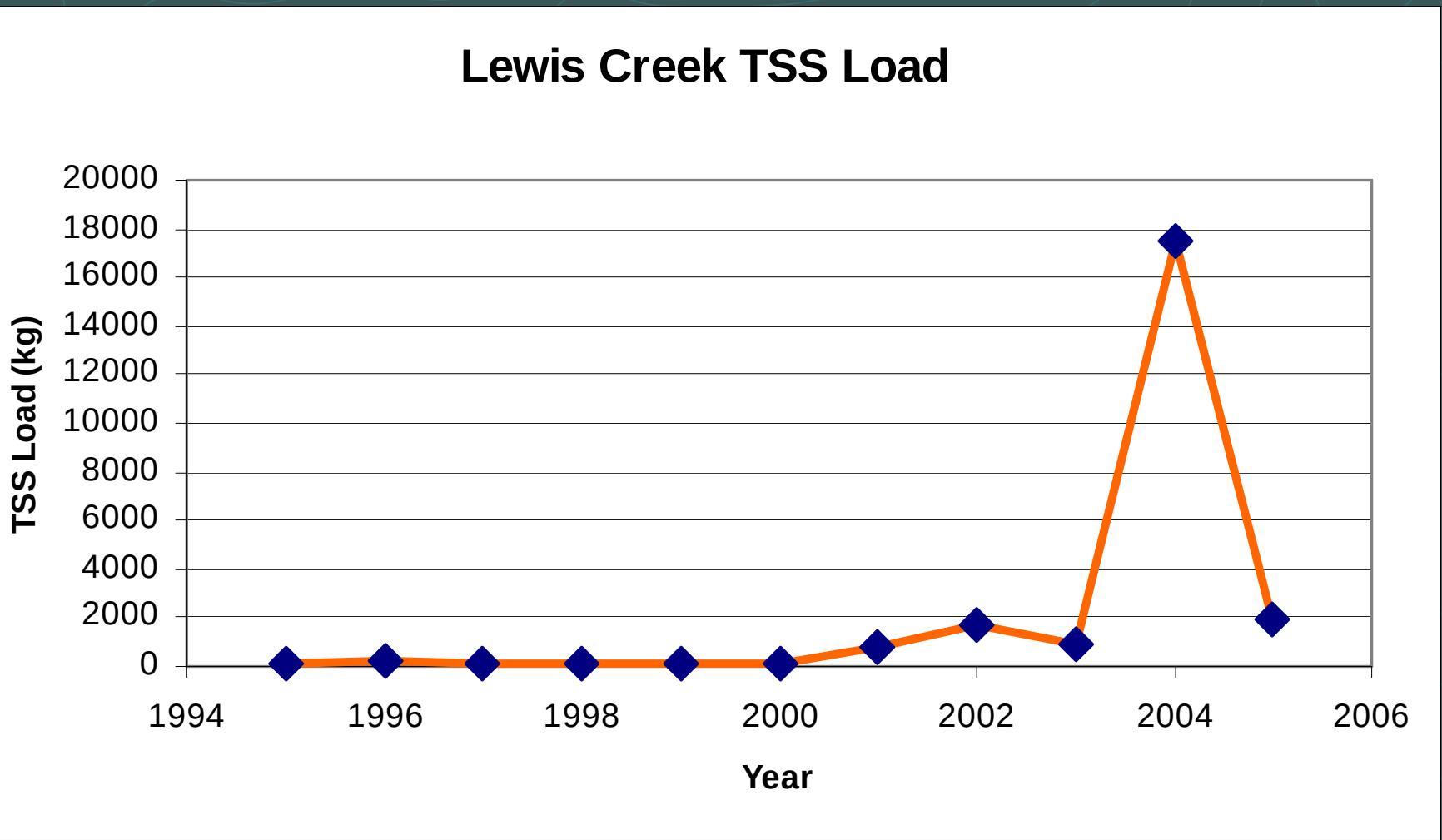
# Lewis Creek Summary

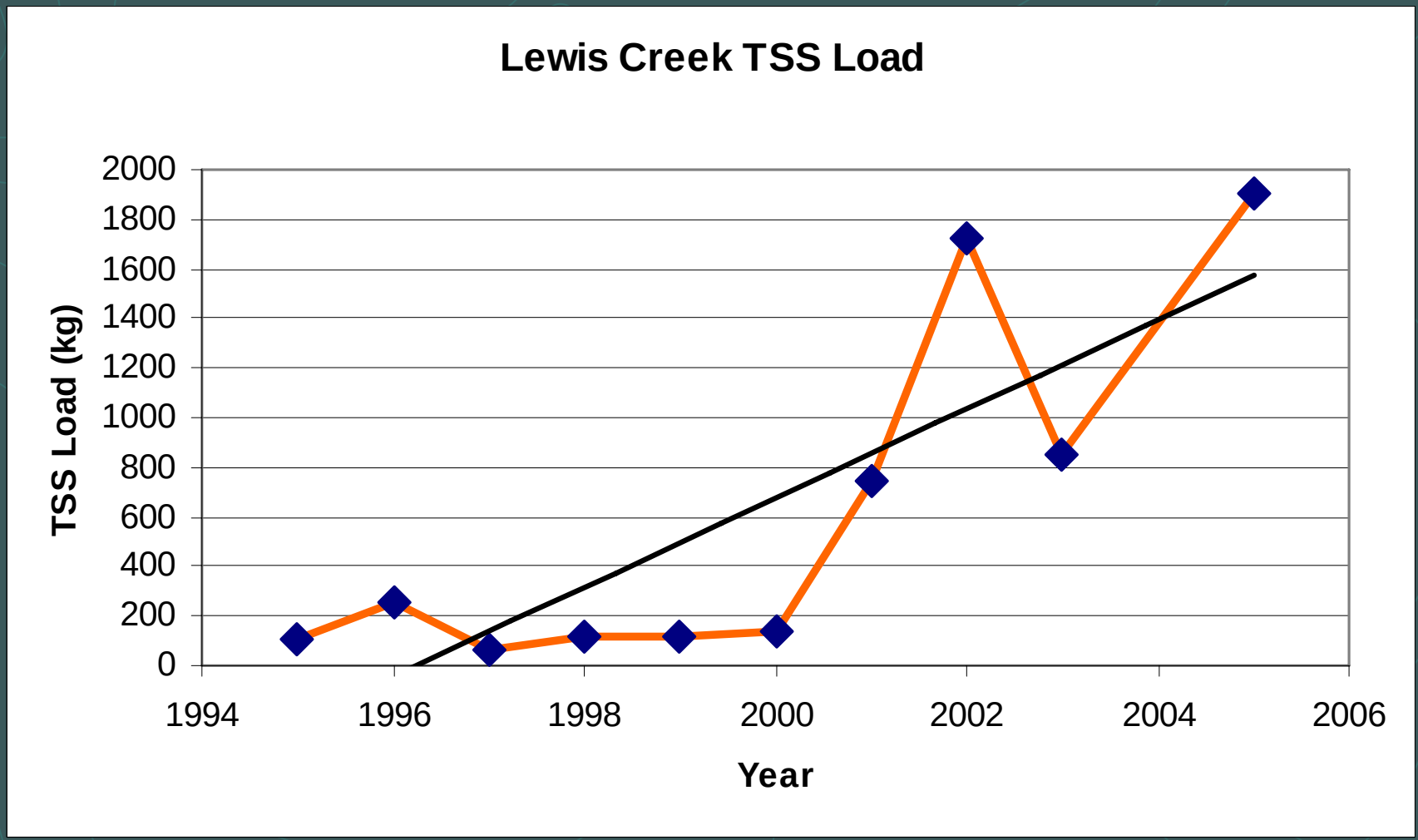
2005 and Previous 4 Quarters Waste Loads

| Watershed Name | Outfall Status 08/11/06 | | | | Stressor | Outfall Discharge per Watershed Acre (gpm/acre) | | 2005 (Kg/Yr) | Previous 4 Qtrs (Kg/Yr) | Approved Not Constructed Waste Load (kg/yr) | Available Waste Load 2005 | Available Waste Load Previous 4 Qtrs | Proposed Additional Waste Load (kg/yr) | Adopted Waste Load Allocation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Active | Deleted | Not Constructed | Proposed | | | | | | | | | | |
| Lewis Creek | 13 | 0 | 1 | 5 | TSS | 1.3 | | 1346.5 | 612.7 | 0 | 215.50 | 949.30 | 174.1 | 1,562.00 |

Individual Application Summary

| Permit No. | Application No. | Revision No. | Proposed Outfalls | Drainage Area (acres) | Remining Area (acres) | Load Contributing Area (acres) | Waste Load from Mine Dewatering | Proposed Additional Load for this Application (kg/yr) |
|---|---|---|---|---|---|---|---|---|
| New | 1001884 | | 001 | 19.30 | 19.3 | 0.00 | NA | 0.0 |
| New | 1001884 | | 002 | 28.80 | 28.8 | 0.00 | 174.10 | 174.1 |
| New | 1001884 | | 003 | 28.10 | 28.1 | 0.00 | NA | 0.0 |
| New | 1001884 | | 004 | 6.70 | 6.7 | 0.00 | NA | 0.0 |
| New | 1001884 | | 005 | 3.30 | 3.3 | 0.00 | NA | 0.0 |
| | | | | | | | TOTAL | 174.1 |


Lewis Creek TSS Load
TSS Load (kg)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1994
1996
1998
2000
2002
2004
2006
Year


Lewis Creek TSS Load
TSS Load (kg)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1994
1996
1998
2000
2002
2004
2006
Year

# Lewis Creek Options

- Three waste load reduction options may be available for additional waste load
  - BMPs
  - Load trading
  - TMDL revision

# Summary

- TMDLs will significantly impact permitting process
- Increase work loads for permit preparation and review
- Will require changes to EP
- May impact approximately 75% of permits
- More work needs to be done by DMLR to complete the TMDL process